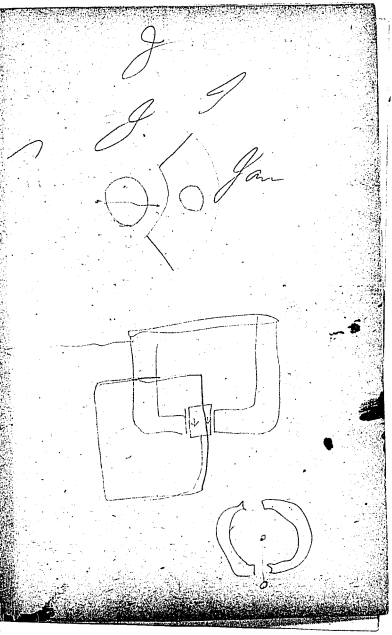
Notebook, N-07-01-28.3

The only dated entry in this notebook is from January 1907. At the beginning of the book are instructions by Edison to Ludwig F. Ott regarding the preparation of iron oxide compounds for storage battery experiments (see also N-07-01-28.2). Most of the book contains notes by Ott pertaining to the preparation of the various compounds. Near the end of the book are 2 pages of instructions apparently from Edison and transcribed by Ott. The front cover is labeled "Important." The pages are unnumbered. Approximately 40 pages have been used.

The log of the various compounds prepared by Ott has not been selected.



William H. Hase's
. . . STATIONER . . .
Good Work Promptly
68 WILLIAM STREET,
NEW YORK.

Jany 28 1907

Louis Ott -

You are to work on Iron Oxide to beat quality —

Precipitated iron oxide is not good except it precipitates crystalline & dries as a powder -

Iron oxide precipitated by molten salts probably is OK as it seems as if it was essential to have the oxide anhydrous + powdery -

See Dr Grothes book & copy what I say in this book -

Make all samples so there will be 4 oz (about) dry that goes to Silver Lake to be reduced by Hydrogen

½ of the sample is reduced & self heated

The other ½ is reduced so the non pyrophoric

Both samples must have 5% of Hg O

added —

You are to use the auto & take Everybodys samples to Silver Lake — See that they are all plainly marked

For Each combination you make Enter the details Clearly & plainly in this book so if it turns out ok we can with Certainty duplicate them,

Walter will take charge of them 2 test packets

are to be made for each half
5 grains each pocket,
Hooper & Holland will send
down results as fast as
they get them —

You better make your fusions
in Cast iron pots —

Ralph fuses ferrous sodium
sulphate until scarcely
any more sulphurous acid
gas comes off & then
exhausts the whole with
water until free from
sulphate,

You might try mixtures in right proportions to form a double salt Even if no double salt is formed of

Ferric Sodium Sulphate
Ferrous Potassium "
Ferric " "

Ferrous Sulphate & Nitrate Soda
Ferric " " "
" " & Borate Soda
Ferrous " & "
& so on using alkaline salts that will fuse in non part,

You could also use Ferrous Sulphate & KOH Solid in Excess

Think you should recrystalize your Iron Salts,

Chloride Calcium
" Zinc
& other chlorides might

possibly act as flux to decompose Ferrous Sulphate

You Could use different fluxes like Sulphate Soda & instead of Ferrous Sulphate Use Ferrous Nitrate, acetate, which decompose by heat,

Carbonate Soda & K good fluxes —

Possibly the reason Fe_2O_3 from Ferrous Na Sulphate work better than Reg is that it is very much finer —

If this is so & that fineness is what is wanted You Could fuse the Ferrous Na Sulphate with some salt that would leave a fine precipitate mixed with the iron say twice as much

of the precipitate as there was
iron oxide & then dissolve
out this fine stuff by some
solvent leaving the iron
extremely finely divided —

Oxalate Fe can't be used as price of
Oxalic acid has more than
doubled in last 6 months —

In making Ferrous Sulphate
look out don't get any Ferric
Hydroxide in the mix as Hydroxide
don't work in Gettering Even of
reduced Cryst —

Might try Melted Sulphide of
iron & put in powdered Ferrous
Sulphate heated so water
driven off - also Ferric Sulphate
water of Cryst driven off —
Then there will be a reaction
forming Sulphite K or Na & FeS
finely divided - Exhaust

with water until no S
or Sulphate Na left
then roast at gentle heat
till all S driven off —

I want you to work exclusively on Iron Tungsten mixtures so as to find out the best way of making the same so as to get the greatest output accuracy and consistency. So far no precipitated oxide has worked well even when reduced by H. this refer to yourselves

You should try every kind of iron and tungsten salt and combine them in various ways

By precipitating together & igniting the oxalates together with the Tungsten salts.

By mixing equal Fe_2O_3 with the salt of tungsten.

By fusing sulphate of iron with Sodium bisulphate until SO_3 practically disappears Exhausting the soluble matter This oxide is finest & finest we have obtained so far. Better than the oxides from oxalates there may be some water in the oxide from fusing Ferrous K sulphate also fusing other iron salts with nitrates chlorides etc to get an iron oxide in different physical states

Use double salts of Fe Tungsten $Fe\,WO_4$

If the fused & exhausted commercially we can no longer use oxalates as Oxalic Acid is to high we shall use oxide from fusion of the Ferrous Sulph which is a cheap process so in your experiments bear in mind that the value of the final result will depend upon how cheap it can be made

see the Jackets sent have an accuracy of 40% to 71% and 440 m a lbs per gram of mixture including H_2O.

80 | 446 (5.5
400
46

3 | 6.20
207 55
827
120
654
627
992
6

| 2000 (36 cents
165
5300
3300
5c

200
5000

144 | 30000 - (208
2688
12000
11552

5 | 208 -
41

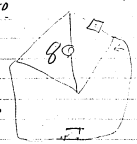
992
8
7936

6c

80

7 | 52
46

66
120
132
66
79



1400
140
1260

60

1300

9.9
+15
495
99
485

13
6
78

110 | 10000 (99
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